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Robert L. Rogers, P.E., P.S.M. ***Rodney K. Rogers, P.S.M.***

WACS 53122
Permit Auth
WT Permit Authoriz Related
FAC Type: WTPF (710)
Subj: SEE BELOW

May 2, 2003

D.E.P.
MAY 09 2003
Southwest District Tampa

Mr. Steven G. Morgan
Solid Waste Section
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

Re: Global Tire Recycling of Sumter County, Inc.
Waste Tire Processing Facility, Wildwood
Pending Permit No. 136808-004-WT
Sumter County

Dear Mr. Morgan:

As a follow up to our submittal of April 16, please find attached three (3) copies of the following:

Subj:

1. Attachment H – Process Description. Revised 5-2-03 CONFIDENTIAL
2. Production Equipment Book Index.
3. Addendum to Attachment I.

Please continue your review of the above referenced permit based on the additional information provided. Thank you for your cooperation.

Sincerely,

Robert L. Rogers, P.E., P.S.M.
For the Company

RLR/lmr

Cc: Brian Fifer, Global Tire

ADDEMDUM TO ATTACHMENT I
PRODUCTION EQUIPMENT BOOK

SUBMITTED TO FDEP AS PART OF
GLOBAL TIRE RECYCLING'S
WASTE TIRE PROCESSING PERMIT
APPLICATION DATED 2-12-98

REV. 2-25-03

OPERATING AND MAINTENANCE MANUAL
GRANUTECH-SATURN MODEL 80
GRIZZLY GRANULATOR
38,000 LBS.
300 HP
460 VAC, 3 PHASE
8,000 LBS./HOUR CAPACITY

GRANUTECH SATURN SYSTEMS

Granutech-Saturn Systems Corporation
201 East Shady Grove Road ◆ Grand Prairie, Texas 75050-6699
Phone: (972) 790-7800 ◆ Fax: (972) 790-8733
email: size-reduction@mac-corp.com

MODEL 80 GRIZZLY START-UP CHECKLIST

1. Read each section of the manual. Ask questions of Granutech-Saturn Systems start-up personnel, or call Granutech-Saturn Systems to be sure you understand the operation of the machinery – especially all safety devices and issues.

2. Check the equipment for any problems in shipping or set-up.

3. Check the Grizzly for proper grouting and mounting. Check the installation of all required safety covers and accessories.

4. Check all electrical connections for proper wiring: proximity sensor, thermocouple, upper housing limit switch & hydraulic power unit solenoids, etc.

5. Check for the proper settings on the soft start speed switch and any accessory equipment. See the electrical drawings and appropriate parts of this manual for the proper settings. Check the hydraulic pump for the correct rotation direction.

6. Unbolt the upper housing and open it. Observe how the upper housing safety locks operate. Place the locks in the locked position.

7. Inspect the rotor, blades, screen, wear plates and general interior of the machine. Look for objects or debris between the rotor and screen. If any are found, remove them.

8. Check to see that blades have been reset, rotated, or replaced if needed. See the procedures on blade gapping and maintenance schedules.

9. Clean all mating surfaces between the upper and lower housing halves. Use a 1-8 UNC tap for cleaning the threads in the bolt holes of the housing hold down bolts, if necessary. Never tap the holes oversize. Do not remove metal from the threads with the tap.

10. Using a meter, test the upper housing limit switch to insure that it functions properly. Never try to start the machine with the housing open. Keep power locked out.

WARNING:

11. Close the upper housing, install the bolts and tighten **to the required torque**. Upper housing hold-down bolts and the infeed hopper fastening bolts will break under normal operation. These are items that require routine inspections - when they fail they must be replaced. Replace these bolts after they have been used one time. Bolts can crack due to normal machine vibrations and can break unexpectedly while being loosened or tightened or torqued. Keep this in mind and never assume an unsafe position when tightening and/or loosening bolts. Torquing the bolts to the specification on the Grizzly assembly drawing will increase average bolt life.

12. Check all gearboxes for the proper oil level.

13. Check all grease and oil locations and adjustment of the clutch.

14. Check the Grizzly drive motor for the proper rotation direction. Check the rotation for all other electric motors on this installation.

15. Set the zero point and range for the Hawkeye current transmitter.

16. Run the Grizzly with no material for 5-10 minutes. Use a clamp on ammeter to verify the no-load reading. The reading should be 90-115 amp.

17. Bring the Grizzly and its related infeed, discharge and air systems on line. Slowly feed material to the Grizzly while monitoring the current load. If things are satisfactory, increase the feed rate to the optimum level. Maintain this condition while monitoring the current draw. The meter should read a steady 300-325 amp. While operating under this steady state condition, develop a method for determining the volume or weight of material being processed over a known time span.

18. If over-amp alarms are active on the system, slowly increase the feed rate until AL1 appears on the ammeter (set at motor nameplate amps). The infeed conveyor should stop and remain stopped until the current load drops back to the normal operating setting. At this time, the infeed conveyor should resume operation.

19. After completing the start-up and the initial capacity testing, the system should be shut down and a visual inspection should be done for loose bolts and obvious problem areas. Look for material clogging in the discharge chute and the air system. Look for safety issues that may become a problem at a later date and document this.

20. Monitoring the current load and the feed rate going into the Grizzly are important. A steady optimum feed rate will achieve the maximum machine capacity with the lowest cost for maintenance and down time per quantity of processed material.

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GRIZZLY

RECOMMENDED DAILY MAINTENANCE

1) Check gearbox oil level.
2) Check Grizzly for any bolts that may have vibrated loose, or cracked, or broken and replace them.
3) Before starting Grizzly, check area around the machine.

RECOMMENDED 30-HOUR TO 40-HOUR MAINTENANCE

Check blades for sharpness. Any blade with 3/32" radius or larger should be rotated or replaced.

Other indicators of the need to rotate blades are:
1) Excessive dust and fibers coming out of the machine.
2) Maximum chip temperature allowable will vary with product being ground. (Example: Maximum allowable chip temperature 230°F when grinding tires.)

RECOMMENDED BI-ANNUAL MAINTENANCE (6 Month)

1) Grease Falk Coupling
2) Grease Falk Torque Coupling
3) Grease Gearbox Bearings
4) Grease Electric Motor Bearings
5) Gearbox Oil: **Gearbox oil should be changed and flushed after one month break-in period.** After break-in period, oil should be changed and flushed every six months or 2,500 hours.

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BOLT TORQUE SPECIFICATION

S.A.E. Grade 5 Bolts, Capscrews, and Studs

COARSE THREAD (N.C.)		FINE THREAD (N.F.)	
Nominal Size	Torque (foot-pounds)	Nominal Size	Torque (foot-pounds)
1/4-20	9	1/4-28	9
5/16-18	17	5/16-24	19
3/8-16	31	3/8 -24	34
7/16-14	50	7/16-20	55
1/2-13	75	1/2-20	80
9/16-12	105	9/16-18	115
5/8-11	145	5/8-18	160
3/4-10	260	3/4-16	280
7/8- 9	380	7/8-14	410
1- 8	575	1-12	625
1-1/8- 7	770	1-1/8-12	840
1-1/4- 7	1080	1-1/4-12	1160
1-3/8- 5	1365	1-3/8-12	1560
1-1/2- 6	1875	1-1/2-12	2040

NOTES:

1. Bolt experts state that bolts, capscrews, etc., should be discarded after being torqued one time and then loosened. Therefore, Granutech-Saturn Systems does not recommend reusing any bolt, capscrew, etc.

2. The torque values listed here should be used under normal conditions. Torque specifications on drawings or otherwise listed in this manual supercede these specifications.

2. The torque values listed will apply a clamping load of 75% of the proof load.

3. A coefficient of friction of 0.15 is assumed for the torque specifications.

4. These torque values can also be applied to dry connections where Loctite 242 (blue) has been applied to threads.

5. S.A.E. Grade 5 bolts are made from quenched and tempered medium carbon steel. Grade 5 bolts can be identified by three (3) equally spaced radial lines embossed on the head of the bolt.

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BOLT TORQUE SPECIFICATION

S.A.E. Grade 8 Bolts, Capscrews, and Studs

COARSE THREAD (NC)		FINE THREAD (NF)	
Nominal Size	Torque (foot-pounds)	Nominal Size	Torque (foot-pounds)
1/4-20	12	1/4 –28	13
5/16-18	25	5/16-24	27
3/8-16	45	3/8 –24	47
7/16-14	70	7/16-20	75
1/2-13	105 125	1/2-20	115
9/16-12	150	9/16-18	160
5/8-11	210	5/8-18	230
3/4-10	370	3/4-16	400
7/8- 9	590	7/8-14	630
1- 8	880	1-12	960
1-1/8- 7	1250	1-1/8-12	1360
1-1/4- 7	1750	1-1/4-12	1890
1-3/8- 5	2210	1-3/8-12	2530
1-1/2- 6	3040	1-1/2-12	3320

NOTES:

1. Bolt experts state that bolts, capscrews, etc., should be discarded after being torqued one time and then loosened. Therefore, Granutech-Saturn Systems does not recommend reusing any bolt, capscrew, etc.

2. The torque values listed here should be used under normal conditions. Torque specifications on drawings or otherwise listed in this manual supercede these specifications.

3. The torque values listed will apply a clamping load of 75% of the proof load.

4. A coefficient of friction of 0.15 is assumed for the torque specifications.

5. These torque values can also be applied to dry connections where Loctite 242 (blue) has been applied to threads.

6. S.A.E. Grade 8 bolts are made from quenched and tempered medium carbon steel. Grade 8 bolts can be identified by six (6) equally spaced radial lines embossed on the head of the bolt.

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GRIZZLY BLADE GAPPING PROCEDURE

The following is a description of how to adjust the blade clearance gap. This is the space between the highest blade on the rotor segment and the corresponding stationary blade. The highest blade on the rotor segment is the one whose cutting edge travels the greatest diameter.

1. Clean off the Grizzly housing and walkway areas.

2. Remove the ten upper housing fastening bolts (Ø1-in UNC). There are six of these bolts on the front side of the machine and four on the back side (side with the hydraulic cylinder).

3. Insure that there are no personnel near the Grizzly when the housing is being opened. Energize the auxiliary pump, turn the housing open switch to the open position and hold until the upper housing comes to a stop in the full open position.

4. Lock the lid open with the locking arms, which are located on the left and right ends of the machine behind the rotor shaft. (*NOTE*: **CAUTION** must be exercised at this point. If the Grizzly has been running recently, the rotor and housing may be very hot. It may remain hot or warm for twenty-four hours or more.)

5. Turn off the auxiliary pump and lock out all electrical power to the Grizzly.

6. Clean the inside of the upper housing. If you are grinding tires, tire rubber and wire will be stuck in the corners and edges of the intersecting plates. Use caution – wear heavy gloves! (The wire will be very sharp.)

7. Clean mating surfaces and all the hold-down bolt holes in the lower housing. Inspect the rotating and stationary blade cutting edges. See Drawing B-1956 for information on the sharpening of used blades. If the blades require rotation or replacement, see section "Rotation or Replacement of Blades".

8. Start at one end of the stationary blades and loosen the three blade-fastening bolts. Back off the 3/4-jam nut on the adjustment bolt. Locate the highest rotating blade on that rotor section. It may be marked in the vicinity with an "H" ground into the rotor section. Align this high rotating blade with the corresponding stationary blade.

9. Using the adjustment bolts, move the stationary blade in towards the rotor until the clearance gap is measured as 0.010-0.014 inch. This gap should be an even space across the length of the stationary blade.

10. Reusing the blade fastening bolts is not recommended. Bolts may break if retorqued and/or loosened, causing personal injury or damage to equipment. Tighten the stationary blade with the three blade-fastening bolts. Rotate the rotor to check the other blades on this section, making sure that they will clear the stationary blade with at least 0.010-inch. After checking all five blades on this rotor section and verifying that they meet this requirement, the stationary blade hold-down bolts can be tightened to a final torque value of 120 ft-lb. The jam nut on the stationary blade adjustment bolt should be tightened to a final torque value of 370 ft-lb. Be sure to hold the adjustment bolt with a hex key while tightening the jam nut to prevent movement of the stationary blade. Adjustment screws and jam nuts should be replaced whenever stationary blades are resharpened or replaced.

11. Repeat steps 8-10 for each of the remaining stationary blades.

12. Clean all mating surfaces. Wear protective goggles and clean the bolt holes with compressed air. If necessary, a 1-8 UNC tap may be used to clean debris from the upper housing hold-down bolt holes. Do not remove metal from the threads with the tap.

13. Clear the working area and energize the auxiliary hydraulic power unit. Turn the switch to open and relieve the pressure on the upper housing safety arms. Rotate the safety arms back out of the way, stand away from the housing and close the lid. ***NOTE***: If the upper housing does not close completely, there may be debris trapped between the housing halves. Reopen and inspect the mating surfaces, clean as required.

14. After closing the upper housing and verifying that it is closed properly, install ***NEW*** housing hold-down fasteners. The part numbers for these fasteners are D2217-21 and D2217-25. The final torque on these bolts is to be 850 ft-lb. These bolts must be torqued to reduce the possibility of breaking due to heavy vibrations.

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ROTATION OR REPLACEMENT OF BLADES

After inspecting the rotating and stationary blades, if it is found that the cutting edges of the blades need resharpening (corner radii are 3/32 inch or greater) or replacing, the following procedure should be followed.

ROTOR BLADES

1. Remove and discard the three retaining bolts and nuts.
2. Remove the blade and clean the bolt holes. Use a wire wheel or stone to clean the blade seat.
3. Clean all surfaces of the blade and install with a new cutting edge in the proper location or replace if all the edges are rounded.
4. Place the blade in the seat and install new bolts. Make sure the blade is seated firmly against the bottom and back surfaces and that there are no clearances caused by debris. Apply Loctite 242 to the bolt threads and torque the nuts to 125 ft-lb.
5. Repeat steps 1-4 for each blade on the rotor segment.
6. If the stationary blades are satisfactory, then return to the Grizzly blade gapping procedure Item 8. Otherwise, go to stationary blades.

STATIONARY BLADES

1. Remove all stationary blade bolts and discard.
2. Remove all blade cover plates.
3. Remove all blades and use a wire wheel to clean the blade seats. Clean all bolt holes, blades and blade cover plates.
4. Reinstall blades with a sharp cutting edge on the top surface closest to the rotor. Replace the blade if all the cutting edges are rounded.
5. Reinstall the blade covers and back out the blade adjustment bolts 3/8 inch. Slide the stationary blades back away from the rotor. Install new hold-down bolts and snug down.
6. Return to the Grizzly blade gapping procedure Item 8.

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GRIZZLY BLADE MAINTENANCE SCHEDULE

During the initial stages of operating a machine, the operator(s) will need to define a maintenance schedule for the blades. This will be dependent upon the quantity and type of material being processed. Before starting this procedure read the information "Grizzly blade gapping procedure". When the method of adjusting and maintaining the blades is understood, the information below is a good guideline to follow for developing a schedule in blade maintenance.

1. Start with a new or rebuilt set of blades that have sharp edges. Set the clearance gap between the rotating and stationary blades to 0.010-0.014 inch. Roll the rotor while doing this to insure the setting applies to the highest rotating blade. Record the clearance gap settings for each blade and torque the blade fasteners. Clean up the Grizzly and fasten the hood. (See Grizzly Blade Gapping Procedure.) After completing this procedure, record the hours from the hour meter.

2. Run the Grizzly for one shift (8-10 hours) with product that represents the typical material to be processed. Open the Grizzly and measure the clearance gaps by placing a feeler gauge between the highest rotating blade and the stationary blade. Record the value found for each of the ten stationary blades. Record the reading on the hour meter. Clean up the Grizzly, close and fasten the hood.

3. Repeat step 2 until a clearance gap of 0.050-0.055 inch is reached. When the blade wear has reached this value, blade adjustment will be required. Set the clearance gap between the rotating and stationary blades to 0.010-0.014 inch. Roll the rotor while doing this to insure the setting applies to the highest rotating blade. Record the clearance gap settings for each blade and torque the blade fasteners. Clean up the Grizzly and fasten the hood. (See Grizzly Blade Gapping Procedures) After completing this procedure, record the hours from the hour meter.

4. Repeat step 3 until the blade edges have a 3/32-inch radius on the cutting edge. At this time, rotation or replacement of the blades will be required.

5. After completing the exercise described above, a person can began developing a schedule for performing routine maintenance on the Grizzly blades. It should be noted that if the type of material being processed changes it might affect the maintenance schedule for the blades. To establish good information, the above process should be completed for each different material.

ATTACHMENT H

(CONFIDENTIAL TRADE SECRET)

Process Description

Rev. 2-25-03

REV. 5-2-03

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 09 2003
SOUTHWEST DISTRICT TAMPA

CONFIDENTIAL TRADE SECRET

Introduction

This process description is intended to give the reader a basic understanding of whole tire to crumb rubber processing. The description will focus on the general process, however, there will be some instances where it will be necessary to describe parts of the process in detail.

The Global Tire Recycling system does not employ experimental technologies nor does it attempt to prove a new design or concept. Global's process is a refinement of the most proven and profitable methods of turning whole tire material into high quality crumb rubber.

The process is based upon the use of cracker mills and fine grind mills, which have been employed in the recycling of tires and other cured rubber materials for decades by such companies as Goodyear, Michelin and Rouse Rubber Industries. There is simply no other equipment on the market that can produce high quality and high volumes of *fine mesh* crumb rubber other than the cracker and fine grind mills used by Global.

The cracker and fine grind mills work so well because, first, there is very little heat generated within the mills during processing. This allows the material to be returned to the mills as often as necessary to obtain 100% of a desired particle size. In all other methods of processing, either cost factors or equipment idiosyncrasies prevent continued recirculation of the rubber. This inability to recirculate the rubber forces other methods to generate a product with an unacceptable range of particle sizes. As a result, the manufacturer can sell only a very small percentage of the total finished product as fine mesh crumb rubber and is forced to sell the larger, less refined material at a much lower price.

The second reason that mills are desirable for tire processing is that a tire processing plant must operate at high volumes in order to be profitable. Even at relatively high gross profit margins, high volume is imperative due to the relatively low sale price per pound for the finished material. Global's mills are designed and manufactured to run 24 hours per day, 7 days per week, 365 days per year. The secondary cracker mill weighs approximately 95,000 lbs., —one mill weighs more than some other complete systems sold on the market today. In addition to the mills' overall size, they are also water cooled to serve two purposes: first, to keep the material cool so that it can be recirculated and, secondly, to keep the rolls (working surface of the mills) cool to reduce wear. * * *

The remaining equipment is also designed to endure the rigors of tire processing. All equipment within the Global Tire processing system has a service factor of <u>1.5 to 2.0 x work load</u> that it is required to perform. This ensures that the entire system, as well as the mills, will operate

* * Note: COOLING TOWERS (A-1 & A-1P) obtain their water from City water lines. They are self-contained, re-circulation systems that do not discharge to either the sewer or ground. Water that evaporates is replenished by City water. The cooling towers do not have filters. *

smoothly—regardless of the demands of the production schedule. In other words, the system is operating at 50% - 75% of the rated capacity of the machinery. For example, a conveyor may handle approximately 2,000 lbs. of material on a consistent basis, based on the size of the material it is carrying, its width, speed and overall length. However, this conveyor is designed and built to handle 4,000 lbs. of material during its operation.

The success of any tire processing system depends not only upon proper machinery selection but also upon the proper assembly of that machinery for optimum processing of the whole tire material. One common flaw in other systems is to process the whole tire material into fine mesh crumb rubber in one step—which at first glance may seem practical. When the whole tire is reduced down to fine mesh crumb rubber in one step, however, the metal and fiber is also broken into fine particles. When fiber and metal separation are attempted, even the best methods and equipment will be inadequate to the task. Separation equipment cannot distinguish between fine mesh rubber and fine fiber because all separation methods at this stage are based on weight differentials, and both types of materials weigh the same. Either all the fiber will be removed and with it most of the valuable fine mesh rubber, or the fine mesh rubber is left behind—intermingled with the fine fiber and small particles of steel.

In the Global system, primary size reduction closely controls the size of the processed rubber. The Grizzly granulator mill will produce rubber particles between 5/8 and 3/16 inch. At this particle size (which is relatively large), the rubber particles are free of fiber and steel, but remain large enough to be distinguished from the lighter fiber by the separation equipment. The fine mesh (such as 40) is then produced from *pure, clean* 3/16 inch to 1/8 inch rubber particles in the secondary size reduction area. Accordingly, little additional contaminant removal is required resulting in no loss of material and an uncontaminated, finished product. When reviewing the following manufacturing process description, it is important to note the size of the rubber particle throughout the processing. We have identified each piece of equipment by alpha/numeric code, keyed to the system layout drawing which is submitted with the application as Attachment C. *

1. Feed Equipment

The initial step in processing whole waste tires into uncontaminated fine mesh crumb rubber is delivery to the processing plant's receiving point. Tires are difficult to handle because of their size and weight. In the Global Tire system, all tires, including chip feed stock, are handled automatically. All tires will be delivered by either tractor-trailers or by smaller trucks. Upon arrival at the facility, all trucks will be weighed at TRUCK SCALE

(W-2) situated next to the guardhouse. The total weight of the loaded truck will be compared to the empty truck's weight—the net is the weight of the tires and is the basis for record keeping and for charging the tipping fee to the clients delivering the tires.

After the truck is weighed, the trailer will either be dropped in the holding area or it will be brought to the TRAILER TIPPER (L-2) and raised vertically until the tires fall into a large bin which has a live floor. This LIVE FLOOR HOPPER (L-1) automatically deposits tires one-by-one via TIRE PICKER (L-3) onto MAIN HOPPER DISCHARGE CONVEYOR (C-12). Should a smaller truck deliver tires, this truck will back up to a second LIVE FLOOR HOPPER and TIRE PICKER (L-4 / L-5) which will deliver tires to the system via MINI HOPPER DISCHARGE CONVEYOR (C-13). Because it may be cost effective to accept chips as basic feed stock, the system incorporates CHIP FEEDING UNIT (L-6). Chips are delivered by dump trailer and automatically fed into the system by the L-6 feed unit. Should the chips be held in a storage area instead of being introduced into the system immediately, a front-loader will deliver the chips to the L-6 auto feed unit. Both the C-12 and C-13 discharge conveyors, which accept material from all three auto feed units, deposit tires onto FIRST TIRE INFEED CONVEYOR (C-14) inside the plant building.

The previous description relates to tires without rims. Tire with rims will be off-loaded in the same way as rimless tires. Passenger car tires with rims will be delivered to the de-rimming area via SECOND TIRE INFEED CONVEYOR (C-15) which is fed by C-14. At C-15, passenger car tires with rims are pulled off onto ROLLER CONVEYOR (C-16A) which feeds PASSENGER TIRE DE-RIMMER (R-1). Truck tires are brought to a separate TRUCK TIRE DE-RIMMER (R-2) in the same manner. A material handler will divert tires with rims into the de-rimming area. Each de-rimmer takes tires off the rims and ejects the tires and rims from the machine.

All passenger car tires, once separated from their rims, will be reintroduced onto the SHREDDER INFEED BELT CONVEYOR (C-1) for processing. The same holds true for the truck tires after the bead wires have been removed by the TRUCK TIRE DE-BEADER (R-3). Bead wire from truck tires will be removed in order to save the shredder and mills from additional wear and tear of processing heavy truck bead wire.

All bead wire from truck tires will be baled by the BEAD WIRE BALER (Y-2). Rims from the de-rimming operation will be placed in a roll-off container via large hoppers that are handled by forklifts.

2. Large Size Reduction

The next step in the process is to place the de-rimmed and de-beaded tires into the first size reduction machine—the shredder. Global Tire uses a high-torque, low rpm HYDRAULIC ROTARY SHEAR SHREDDER (E-1). All tires will be fed into the shredder via the SHREDDER INFEED BELT CONVEYOR (C-1). There are numerous advantages to a hydraulic shredder over a direct drive unit.

In a direct drive unit, the electric motor reverses when an overload occurs which is detrimental to the motor and drive train. An overloaded hydraulic shredder, on the other hand, automatically reverses the flow of hydraulic fluid through a valve to reverse the cutters. In addition, the nature of the hydraulic system isolates the drive unit from the constant shock of loading and unloading as tires are introduced into the shredder. A direct drive system's motors and gear box experience all the vibration and shudder encountered at the point of operation—the hydraulic unit does not.

As indicated, the shredder is the first point where size reduction takes place within the system. Size reduction is accomplished by two sets of cutters and spacers running into one another over two parallel shafts. Shredding is the least complicated part of the process. The tire is reduced in size (based on cutter and space dimensions) to a chip averaging 4 inch x 4 inch. No fiber separation (and only minimal metal separation) is accomplished at this point. The purpose of the size reduction is to create efficiency in the down-stream equipment. In addition, the shredder performs an important safety function. Should a piece of tramp metal be concealed within a tire, the shredder will either process it to a manageable size or the tramp metal will cause the shredder to constantly reverse until the metal is removed, thereby protecting the down-stream equipment from potentially harmful objects. Tire chips leaving the shredder go to DISCHARGE CONVEYOR FROM SHREDDER (C-2), and on to the GRIZZLY GRANULATOR (G-1). *

OVERSIZED MATERIAL BELT CONVEYOR TO CRACKER (C-9) serves two purposes. First, it is the infeed conveyor for material leaving the shredder via C-2. Secondly, C-9 is part of the re-circulation system associated with the Grizzly granulator. * As mentioned previously, one of the advantages of the system is its ability to re-circulate material in order to precisely control particle size through the entire process up to the final product stage. Conveyor C-9 accepts material from C-2 and deposits the chipped whole tire into the GRIZZLY GRANULATOR (G-1).

Note: The grizzly granulator does not require water cooling. Also, in the process of replacing the primary cracker mill with the grizzly granulator, the following equipment also was removed: C-10 primary cracker mill metal remover belt conveyor; T-1 & T-2 single surface screeners. (The grizzly granulator has a built-in screener system.) *

The GRIZZLY GRANULATOR (G-1), a 38,000 lb., 300 HP, Model 80 Granutech-Saturn granulator, is the first of two size-reduction pieces of equipment that together are designed to complete the primary size reduction and contaminant liberation process. The Grizzly granulator will reduce the 4"x4" tire material down to a particle size of approximately ½". Size reduction is accomplished by means of a large rotating shaft that has hardened cutting surfaces that are set at close tolerances to stationary cutting beds. When the tire chip material comes between these two surfaces, it is sheared, along with any entrapped wire.

The material will stay in this chamber until is sheared (cut) down to approximately ½" in size. At that point, much of the wire and some of the fiber will have been liberated from the rubber. This material all will fall through a 5/8" screen and on to a DISCHARGE CONVEYOR (C-3). All of this material will pass under two CROSSBELT MAGNETS (M-1 and M-2). The relatively clean rubber will continue on and will be discharged on to CONVEYOR (C-6). Material that is either wire, or that contains wire entrapped in it, will be picked up by either magnet M-1 or M-2 and will be discharged on to CONVEYORS C-4 or C-5. As the material then passes under CROSSBELT MAGNET M-3, the wire and product that is mainly wire will be pulled off and discharged on to CONVEYOR C-7. It will travel on to CONVEYOR C-7E, which will take it outside through an opening in the wall and discharge it on to a paved area of the outside yard where it will form a small temporary pile. Less than two dumpster equivalents of wire will accumulate there, as a front end loader will be used every shift to pick it up and dump it into 30 CY roll off dumpsters for disposal. Material that is relatively clean rubber that passes under and past magnet M-3, will be discharged on to CONVEYOR C-8, which will discharge on to CONVEYOR C-9 for re-circulation through the Grizzly granulator (G-1) again. This will minimize scrap and maximize recovery and recycling of waste tire rubber. *

Rubber that is approximately ½" in size can be removed from the system by having CONVEYOR C-6 discharge into a small dumpster. That dumpster then can be transported by a forklift to storage bin location H3 and used as an emergency feedstock for the secondary cracker mill for when the Grizzly granulator is down for maintenance or repairs. That material will be transported by a front-end loader from storage bin H3 and deposited on to SCREENER T-4.

*

3. Secondary Size Reduction

Metal-free rubber particles are deposited onto OVERSIZED MATERIAL BELT CONVEYOR (C-8S) from C-6. C-8S is also the first conveyor of the recirculation system for the secondary cracker mill. C-8S accepts the material from C-6 and receives oversized material from the two secondary single-surface screeners. C-8S delivers material to OVERSIZED MATERIAL BELT CONVEYOR TO CRACKER MILL (C-9S). C-9S drops the material into the SECONDARY CRACKER MILL (E-3). The secondary cracker mill is a 300-horsepower unit which reduces the approximately ½ inch material down to 3/16 inch – 1/8 inch particle size. At this stage, all rubber particles are metal-free. The material discharged from the secondary cracker mill is removed by CRACKER MILL DISCHARGE CONVEYOR (C-3S). C-3S sends the material to OSCILLATING BELT CONVEYOR (C-4S). The oscillating conveyor feeds material to one of the SINGLE SURFACE SCREENERS (T-3 and T-4) at a time. T-3 and T-4 screeners have small openings to size the rubber particles. The two screeners are serviced by the aspiration system to remove liberated fiber. *

Sized material from T-3 and T-4 goes to GRAVITY TABLE INFEED BELT CONVEYOR (C-11). C-11 sends the material to GRAVITY SEPARATOR (V-1). The gravity separator is the third and final location for fiber removal. Until now, liberated fiber has been removed by negative air pressure at each of the single surface screeners. The gravity separator is a more sophisticated method of fiber removal using negative air pressure in conjunction with a specially designed table that compares mass differentials in order to separate light fiber contaminants from the rubber.

Final primary sizing is also accomplished by the gravity table. Any particles that exceed 3/16 inch in particle size are returned to screen T-4 via GRAVITY TABLE FIBER DISCHARGE SCREW CONVEYOR (S-1B). Notably, once the material enters the gravity separator the system is fully enclosed. This prevents the fine mesh particles from escaping into the air—which could damage equipment, create an unclean work environment and contaminate the loose, high-priced finished product.

Clean and sized rubber is removed from the gravity separator by GRAVITY TABLE DISCHARGE SCREW CONVEYOR (S-1). S-1 feeds VACUUM DESTONER (V-2), which removes stones, grit, and other fine dense contaminants. Stones and grit are trapped in tire treads and, in turn, are processed by the equipment. Some stones are untouched but most are pulverized to a sandy consistency which would contaminate the fine crumb rubber. This piece of equipment is necessary should waste tires come from a landfill or other dirty stock pile. (1)

Each of the single-surface screeners, as well as the gravity separator and the destoner, are serviced by the aspiration system. The negative air pressure in the duct work takes the fiber to the BAG HOUSE (B-1). The bag house creates a cyclone and airlock which slows the air and allows the fiber to fall into small dumpsters that are transported by a forklift to a nearby fiber trailer for disposal. This eliminates the need for BAG HOUSE BAILER (Y-1), which has been eliminated. The sock filters in the bag house are disposed by placing them in the wire dumpster for removal to the landfill.

4. Fine Grind Reduction

At this point, the process had made a small 3/16 inch rubber particle that is virtually free of metal, fiber, grit and other contaminant. The material

(1) At this stage of the process, crumb rubber that is 3/16" – 1/8" in size can be removed via a drop opening in screw conveyor S-1 into a small dumpster. The dumpster then is transported by a forklift to an enclosed storage bin H-1 (see Storage Plan) for use if the secondary cracker mill ever is down for maintenance or repair. The material is transported by a front-end loader and placed on screener T-4.

can be ground down to fine mesh material without concern for contaminating the final product.

Material that has been cleaned by the destoner is discharged into AERO-MECHANICAL CONVEYOR (F-2) which transports the material vertically up to the top of the MEZZANINE (Z-1) and delivers the material to SURGE BIN FEED SCREW CONVEYOR (S-2). VOLUMETRIC FEEDER (A-5) attached to the F-2 conveyor introduces talc (calcium carbonate) into the system at a percentage allowed under Florida DOT specifications in order to reduce rubber clumping and facilitate screening. S-2 takes the material to SURGE BINS H-1 (A, B & C) located on top of the mezzanine. | * Cut gates in the screw conveyor allow the material to be deposited in any of the three surge bins.

The system allows an individual surge bin and its corresponding fine grind mill to be pulled from use without having to stop the other two fine grind mills. For example, should a screen require changing in the No. 1 fine grind mill cell, the cut gate would be closed to that surge bin. The material in the surge bin screw conveyor would bypass the No. 1 surge bin and deposit material into the No. 2 and No. 3 bins. This allows two thirds of the system to continue operating while preventative maintenance or unscheduled maintenance is performed on any piece of equipment in that fine grind cell.

Surge bins are a vital part of the system. First, the bins guarantee that the fine grind mills are never without material. This is important because the fine grind mills' rolls are set to push against one another. Only material being ground between the rolls keeps them from touching and grinding each other. The surge bins hold enough material (16,000 – 18,000 lbs.) to allow the mills to operate for approximately 8 hours. Secondly, surge bins allow the fine grind area to run an additional shift while the front end of the system is not operating. Should maintenance be required on any front end equipment, the back end equipment can continue to produce finished product for 8 hours. Moreover, the front end of the system might run only one or two shifts which the back end runs an additional second or third shift. The front end of the system has a higher capacity which allows for expansion in the fine grind area. The fine grind area is the limiting factor for the system's total capacity.

The surge bins nest in a cutout in the floor of the mezzanine which allows the TWIN SCREW SURGE BIN DISCHARGE CONVEYORS (S3A-C) to be mounted under the floor of the mezzanine. Sensors in a fine grind mill's feed hopper sense the level of material in the hopper. When material within the feed hopper falls below a certain level, the sensor activates the twin auger for that cell which introduces more material from the surge bin into the closed material feed loop for the fine grind cell. This sequence continues as long as the fine grind mill is operating and ensures that there is always sufficient material in the cell.

The twin screw conveyors feed material out of the surge bins into FINE GRIND DISCHARGE SCREW CONVEYORS (S4-A-C). Material deposited into a mill discharge conveyor mixes with the material which has just been processed by the mill. Coarser material is mixed with newly processed material because the mills operate more efficiently with feed stock having a wide range of particle sizes. The material is fed by conveyors S4A-C into AERO MECHANICAL CONVEYORS (F-1A-C). These aero conveyors take the material back to the mezzanine where it is fed into DISCHARGE CHUTES TO FINE GRIND MILLS (D-1A-C). These diverter chutes split the material flow 50/50 onto TWO SURFACE SCREENERS (T-5A and T-6A / T-5B and T-6B / T-5C and T-6C). These double-deck screeners size the material based upon the screen size installed in the screener and determine the final product size. By virtue of having two decks, the screeners can produce two differently-sized products at the same time. As with the single deck screeners, acceptable material runs off the end of the screen. Oversized material falls into a tube at the end of each screener feeding the FINE GRIND MILLS' (E4A-C) feed hoppers which are equipped with material level sensors. The closed loop and enclosed feed system just described is used for each of the three fine grind mill cells on and under the mezzanine.

The basic differences between the cracker mills and the fine grind mills are as follows:

- Cracker mill E-3 has rolls of equal diameter (28") and are 42" long. The friction ratio is low and the corrugation is relatively large. The horsepower is 300 HP. *

- Fine grind mills E4A-C have rolls of unequal diameter. One roll is 24" in diameter and the other is 21" in diameter. This difference increases the friction on the rubber by virtue of the rolls running at different speeds. The corrugation on the fine grind mills is relatively small and is set at different angles. The rolls are shorter at 36" in length. The horsepower is 250 each. The fine grind mills are smaller than the cracker mills because they must produce more pressure. They have shorter rolls to eliminate deflection within the rolls.

When finished material passes through the T-5 and T-6 double deck screeners it falls into either SCREW CONVEYOR (S-5) OR (S-6) depending on the way the T-5 and T-6 screeners are set up to separate the fine and coarse material. S-5 and S-6 run underneath the mezzanine and accept finished material from all three fine grind cells. S-5 feeds SCREW CONVEYOR (S-8) and S-6 feeds SCREW CONVEYOR (S-7).

S-7 and S-8 feed SINGLE SURFACE SCREEN SEPARATORS (T-7) and (T-8). These rescreeners have been incorporated into the system as a quality control measure because the double-deck screeners in the fine grind cells are usually equipped with very fine mesh screens, such as 40 mesh. These fine mesh screens are susceptible to tearing after extended use and the tearing may not always be detected by visual inspection, allowing oversized material to find its way into the final product stream in the absence of rescreeners.

Rescreeners T-7 and T-8 perform the final check to ensure proper sizing of material prior to bagging. As with the other screeners in the system, T-7 and T-8 send the oversized material onto conveyor S-1A.

Finished acceptable product passed by rescreeners T-7 and T-8 feeds into the AUGER BAGGERS (A-2 and A-3). Baggers A-2 and A-3 automatically feed material into bags and, when a predetermined weight is reached, the baggers shut off the flow.

The bags are stitched closed, palletized and set aside via forklifts for shipment to customers. All product is shipped with product certifications. The certifications are performed by the in-house laboratory/quality control department. The following tests are generated on every skid of material generated by the systems to ensure compliance with DOT specifications for crumb rubber.

- SIEVE ANALYSIS
- MOISTURE CONTENT
- ASH CONTENT
- RUBBER HYDROCARBON PERCENTAGE
- ACETONE EXTRACT

All skids are numbered and identified by shift.

5. Products

Global will produce fine mesh crumb rubber, primarily 40 mesh but also some 80 mesh, for sale to asphalt emulsion mixers who use crumb rubber to produce the crumb rubber modified asphalt required for all Florida DOT and many county and municipal road building projects. In the future, and as capacity expands, Global hopes to sell crumb rubber to molded products manufacturers that may have different particle size specifications than the DOT. Global's flexible system can produce smaller mesh-sized rubber with the substitution of finer screens at the fine grind stage of its process.

6. Waste Tire Receiving and Storage

Global will receive waste tires from Florida DEP registered waste tire collectors, as described above in the "Feed Equipment" section of the process description.

Ideally, all tractor-trailers or smaller trucks arriving at Global's plant will dump whole waste tires into the live floor hopper with no delay. If there is a slowdown in the system which prevents immediate processing of tires, they will be stored in their trailers in staging areas "B" to the west and south of the building. (See Storage Plan.) If the trailers, or trucks, cannot be left behind by the tire collectors, then they will be manually unloaded and the tires will be stacked within the confines of storage locations "C". Tires will not be "stored" at these locations, as they are Moving Zones. This means that they constantly will be moving into and out of these zones – usually in less than one week's time (so there will be no mosquito or vermin problem). Tires in these Moving Zones will be transported by a front-end loader or forklift to either of the live floor hoppers L-3 and L-5, or placed directly on to the main infeed conveyor C-12. A small number of good used tires may be culled for the resale market, set aside in an area north of the Grizzly granulator, and periodically stacked into a trailer by a forklift. *

Bagged and palletized crumb rubber will be stored for shipment to customers in an area south of the secondary cracker and fine grind mills. All of these indoor storage areas are indicated on the Overall Floor Plan, Project Drawing A-1. A copy of the Project Drawings is submitted as Attachment B to the application.

7. Production Employees

The Global Tire Recycling Manning Table, submitted with the Production Equipment Book (Attachment I) describes the number, job description and responsibilities of Global's production labor, quality control and supervisory personnel—at increasing levels of production with added shifts.

* Revised 2-25-03

ADDENDUM TO ATTACHMENT H

(CONFIDENTIAL TRADE SECRET)

PROCESS DESCRIPTION

SECTION 4 FINE GRADE REDUCTION

On page 10 of the Process Description, the bagging of Global's finished product into 50 pound bags is described. In addition to this method of storage and shipment of crumb rubber, Global's system now incorporates two other means of storage and shipment to meet its potential customers' needs and to provide maximum flexibility to the system.

If a customer desires product to be shipped in one ton super sacks, product can be diverted from the AUGER BAGGERS via screw conveyers (S10 & S11), where product can be diverted into one of three SUPER SACK BAGGING STATIONS. At these stations, poly-vynal bags, which are approximately 4'x4'x6', are hung by four loops (that are attached to the top of the bags) on two arms. Product is fed into the sacks via chutes that are inserted into the funnel tops of the bags. Load cells that are built into the arms indicate when the desired weight (usually one ton) is achieved and the flow is cut off, at which point the bag is sealed and off-loaded by a forklift.

If a customer desires crumb rubber to be shipped to them via tanker trucks, product can be allowed to continue along screw conveyers (S11 & S12), which go through the South wall of the building on to screw conveyers (S13 & S14 A & B), where product can be loaded into any one of six bins in the outside tanker hopper (H4). Each bin can hold approximately 20-22 tons of | * crumb rubber, which is the amount that one tanker truck can hold. The tanker hopper is elevated such that one or two trucks can back under it and be loaded via discharge chutes in the bottom of each bin that will be aligned with the top portals of the tanker trucks. A funnel-like chute with a visquine "skirt" will ensure that no crumb rubber will be emitted into the surrounding area. In addition, the entire hopper is covered and protected by a steel canopy that also serves to protect the product from the elements as it enters the bins via a small portal at the top of each one.

If an individual bin needs to be emptied of a small amount of remaining crumb rubber to facilitate filling it with a different mesh size, it will be emptied into super sacks that would be suspended on the arms of a forklift. This sack of material then will be emptied into a small RICIRCULATION BIN inside the building. From there, product will be reintroduced to the main feed screw conveyers via a FLOWVEYOR CONVEYOR (F5) for reloading into a different bin in the outside hopper.

With these two enhancements to the crumb rubber production system, Global will be meeting the needs of its customers while it achieves greater flexibility and efficiency in its operations in a very controlled and contained manner.

PRODUCTION EQUIPMENT BOOK
(Rev. 4-20-03)

INDEX

	Code	Equipment
1	A-1/A-1P	Cooling towers
2	A-2/A-3	Auger bagger
3	A-4	Air compressor
4	A-5	Volumetric feeder
5	B-1	Bag house
6	C-1	Shredder in-feed belt conveyor
7	C-2	Discharge conveyor from shredder
8	C-3/C-3s	Primary cracker mill discharge conveyor
9	C-4/C-4s	Oscillating belt conveyor
10	C-5	Sized material from Rotexes belt conveyor
11	C-5s	Sized material from Rotexes belt conveyor
12	C-6	2ndary metal removal belt conveyor
13	C-7/C-7E	Metal Transport Conveyor & Extension
14	C-8/C-8s	Oversized material belt conveyor
15	C-9/C-9s	Oversized material belt conveyor to cracker
~~16~~	~~C-10~~	~~Primary metal remover belt conveyor~~ Deleted
17	C-11	Gravity table feed conveyor
18	C-12	Main hopper takeaway conveyor
19	C-13	Mini hopper takeaway conveyor
20	C-14	First tire infeed conveyor
21	C-15	Second tire infeed conveyor
22	C-16A/C-16B	Roller conveyors
23	D-1A/D-1B/D-1C	Discharge chutes to find grind mills
24	E-1	Hydraulic rotary sheer shredder
25	E-2	Primary cracker mill
26	E-3	Secondary cracker mill
27	E-4A/E-4B/E-4C	Fine grind mills
28	F-1A/F-1B/F-1C	Aero-mechanical conveyor (Flo-veyor)
29	F-2	Aero-mechanical conveyor (Flo-veyor)
30	H-1A/H-1B/H-1C	Twin auger surge bins
31	L-1/L-2/L-3	High Volume Whole Tire Feed System
	L-1	Live floor hopper
	L-2	Trailer dumper
	L-3	Tire picker
32	L-4/L-5	Low Volume Whole Tire Feed System

	L-4	Live floor hopper	
	L-5	Tire picker	
33	L-6	Chip Feeding Unit	
34	M-1	Crossbelt with variac	
35	M-2	Inline belt magnet	
36	M-3	Crossbelt magnet	
37	R-1	Passenger tire derimmer	
38	R-2	Truck tire derimmer	
39	R-3	Truck tire debeader	
40	S-1	G-table discharge screw conveyor/feed to destoner	
41	S-1A	Destoner discharge screw conveyor/feed to Floveyor	
42	S-1B	Fibrous material discharge from gravity table	
43	S-1C	Overs discharge from rescreeners	
44	S-2	Surge bin feed screw conveyor	
45	S-3A/S-3B/S-3C	Surge bin discharge screw conveyor	
46	S-4A/S-4B/S-4C	Grinder discharge screw conveyor	
47	S-5	Transport fine material screw conveyor	
48	S-6	Transport coarse material screw conveyor	
49	S-7	Transport sized material to rescreener	
50	S-8	Transport sized material to rescreener	
51	S-9A/S-9B/S-9C	F1 discharge conveyor	
52	~~T-1/T-2~~T-3/T-4 P-1/P-2/P-3/P-4	Single surface screener with aspirators (T=screeners, P=aspirators)	T-1 & T-2 Deleted
53	T-5A/T-5B/T-5C/ T-6A/T-6B/T-6C	Screen-Aire Separators	
54	T-7/T-8	Screen Separators	
55	V-1	Gravity separator	
56	V-2	Vacuum destoner	
57	W-1	Platform scale (inside)	
58	W-2	Truck scale (outside)	
~~59~~	~~Y-1~~	~~Bailer~~	Deleted
60	Y-2	De-beader Bailer	
61	Y-3	Tread steel compactor	
62	Z-1	Mezzanines	
63	n/a	Lab equipment	
64	G-1	Grizzly granulator	

EQUIPMENT LIST – HP, ELECTRICAL SPECS & CAPACITY

	Code	Equipment	HP	Electrical Specs	Capacity
1	A-1/A-1P	Cooling towers	5 fan 20 pump	230/460 VAC 3 PH	300 gal./min.
2	A-2/A-3	Auger bagger	5	230/460 VAC 3 PH	3-4 50 lb. bags/min.
3	A-4	Air compressor	30	230/460 VAC 3 PH	100 ACFM @ 125 PSIG
4	A-5	Volumetric feeder	1	230/460 VAC 3 PH	6.5 cubic ft/hr.
5	B-1	Bag house – MCF filter	5 blower 1 cleaning arm	230/460 VAC 3 PH	N/A
5	B-1	Bag house – rotary airlock	3	460 VAC 3 PH	N/A
5	B-1	Bag house – class 4 fan	200	230/460 VAC 3 PH	N/A
6	C-1	Shredder in-feed belt conveyor	5	230/460 VAC 3 PH	20,000 lbs./hr.
7	C-2	Discharge conveyor from shredder	3	230/460 VAC 3 PH	20,000 lbs./hr.
8	C-3/C-3s	Primary cracker mill discharge conveyor	5	230/460 VAC 3 PH	18,000 lbs./hr.
9	C-4/C-4S	Oscillating belt conveyor	3	230/460 VAC 3 PH	16,000 lbs./hr.
10	C-5	Sized material from Rotexes conveyor	5	230/460 VAC 3 PH	12,000 lbs./hr.
11	C-5s	Sized material from Rotexes conveyor	3	230/460 VAC 3 PH	12,000 lbs./hr.
12	C-6	2ndary metal removal belt conveyor	3	230/460 VAC 3 PH	12,000 lbs./hr.
13	C-7/C-7E	Metal Transport Conveyor & Extension	3 / 5	230/460 VAC 3 PH	2,000 lbs./hr.
14	C-8/C-8s	Oversized material belt conveyor	5	230/460 VAC 3 PH	16,000 lbs./hr.
15	C-9/C-9s	Oversized material belt conveyor to cracker	3	230/460 VAC 3 PH	16,000 lbs./hr.
~~16~~	~~C-10~~	~~Primary metal remover belt conveyor~~	~~3~~	~~230/460 VAC 3 PH~~	~~2,000 lbs./hr.~~ Deleted
17	C-11	Gravity table feed conveyor	5	230/460 VAC 3 PH	12,000 lbs./hr.
18	C-12	Main hopper takeaway conveyor	10	230/460 VAC 3 PH	20,000 lbs./hr.
19	C-13	Mini hopper takeaway conveyor	7 ½	230/460 VAC 3 PH	20,000 lbs./hr.
20	C-14	First tire infeed conveyor	3	230/460 VAC 3 PH	20,000 lbs./hr.
21	C-15	Second tire infeed conveyor	3	230/460 VAC 3 PH	20,000 lbs./hr.
22	C-16A/C-16B	Roller conveyors	N/A	N/A	N/A
23	D-1A/D-1B/D-1C	Discharge chutes to fine grind mills	N/A	N/A	N/A
24	E-1	Hydraulic rotary sheer shredder	300	460 VAC 3 PH	29,000 lbs./hr.
25	E-2	Primary cracker mill	400	460 VAC 3 PH	16,000 lbs./hr.
26	E-3	Secondary cracker mill	300	460 VAC 3 PH	14,000 lbs./hr.
27	E-4A/E-4B/E-4C	Fine grind mills	250	460 VAC 3 PH	2,000 lbs./hr.
28	F-1A/F-1B/F-1C	Aero-mechanical conveyor (Flo-veyor)	3	230/460 VAC 3 PH	6,000 lbs./hr.
29	F-2	Aero-mechanical conveyor (Flo-veyor)	3	230/460 VAC 3 PH	12,000 lbs./hr.
30	H-1A/H-1B/H-1C	Twin auger surge bins	N/A	N/A	6,000 lbs./hr.
31	L-1/L-2/L-3	High Volume Whole Tire Feed System	--	--	--
	L-1	Live floor hopper	15 pwr unit #1 15 pwr unit #2	230/460 VAC 3 PH	1,000 tires/hr.
	L-2	Trailer dumper	30	230/460 VAC 3 PH	N/A
	L-3	Tire picker	7 ½	230/460 VAC 3 PH	1,000 tires/hr.

CONFIDENTIAL TRADE SECRET

(Rev. 4-20-03)

EQUIPMENT LIST - HP, ELECTRICAL SPECS & CAPACITY

32	L-4/L-5	Low Volume Whole Tire Feed System	--	--	--	
	L-4	Live floor hopper	20	230/460 VAC 3 PH	1,000 tires/hr	
	L-5	Tire picker	7 ½	230/460 VAC 3 PH	1,000 tires/hr.	
33	L-6	Chip Feeding Unit	3	230/460 VAC 3 PH	20,000 lbs./hr.	
34	M-1	Crossbelt with variac	3	230/460 VAC 3 PH	all metal generated	
35	M-2	Inline belt magnet	3	230/460 VAC 3 PH	all metal generated	
36	M-3	Crossbelt magnet	3	230/460 VAC 3 PH	all metal generated	
37	R-1	Passenger tire derimmer	10	230/460 VAC 3 PH	150-200 tires/hr	
38	R-2	Truck tire derimmer	15	230/460 VAC 3 PH	50-60 tires/hr	
39	R-3	Truck tire debeader	60	460 VAC 3 PH	50-70 tires/hr	
40	S-1	G-table discharge screw conveyor/feed to destoner	5	230/460 VAC 3 PH	12,000 lbs./hr.	
41	S-1A	Destoner discharge screw conveyor/feed to Floveyor	2	230/460 VAC 3 PH	12,000 lbs./hr.	
42	S-1B	Fibrous material discharge from gravity table	1 ½	230/460 VAC 3 PH	3,000 lbs./hr.	
43	S-1C	Overs discharge from rescreeners	2	230/460 VAC 3 PH	12,000 lbs./hr.	
44	S-2	Surge bin feed screw conveyor	3	230/460 VAC 3 PH	12,000 lbs./hr.	
45	S-3A/S-3B/S-3C	Surge bin discharge screw conveyor	1	230/460 VAC 3 PH	4,000 lbs./hr	
46	S-4A/S-4B/S-4C	Grinder discharge screw conveyor	1	230/460 VAC 3 PH	6,000 lbs./hr.	
47	S-5	Transport fine material screw conveyor	2	230/460 VAC 3 PH	6,000 lbs./hr.	
48	S-6	Transport coarse material screw conveyor	2	230/460 VAC 3 PH	6,000 lbs./hr.	
49	S-7	Transport sized material to rescreener	1 ½	230/460 VAC 3 PH	6,000 lbs./hr.	
50	S-8	Transport sized material to rescreener	2	230/460 VAC 3 PH	6,000 lbs./hr.	
51	S-9A/S-9B/S-9C	F1 discharge conveyor	1	230/460 VAC 3 PH	6,000 lbs./hr.	
52	~~T-1/T-2~~T-3/T-4	Single surface screeners	5	230/460 VAC 3 PH	16,000 lbs./hr.	T-1 & T-2 Deleted
52	P-1/P-2/P-3/P-4	Aspirators for T-1 thru T-4	N/A	N/A	N/A	
53	T-5A/T-5B/T-5C/ T-6A/T-6B/T-6C	Screen-Aire Separators	3 screen 5 fan	230/460 VAC 3 PH	3,000 lbs./hr.	
54	T-7/T-8	Screen Separators	2	230/460 VAC 3 PH	6,000 lbs./hr.	
55	V-1	Gravity separator	1 vane feeder 3 table 30 fan	230/460 VAC 3 PH	12,000 lbs./hr.	
56	V-2	Vacuum destoner	1 vane feeder 2 table 20 fan	230/460 VAC 3 PH	12,000 lbs./hr	
57	W-1	Platform scale (inside)	N/A	N/A	5,000 lbs.	
58	W-2	Truck scale (outside)	N/A	N/A	120,000 lbs.	
~~59~~	~~Y-1~~	~~Bailer~~	~~3 (estimate)~~	~~230/460 VAC 3 PH~~	~~unknown~~	Deleted
60	Y-2	De-beader Bailer	3 (estimate)	230/460 VAC 3 PH	unknown	
61	Y-3	Tread steel compactor	3 (estimate)	230/460 VAC 3 PH	unknown	
62	Z-1	Mezzanines	N/A	N/A	N/A	
64	G-1	Grizzly granulator	300	230/460 VAC 3 PH	8,000 lbs./hr.	

CONFIDENTIAL TRADE SECRET